EECS 600
Function Space Methods in System Theory

Winter 2013
Monday and Wednesday, 10:30am-12pm

This course has been taught in the past by Jessy Grizzle and Jeff Fessler, and we will cover essentially the same material:

Did you use the Hahn-Banach theorem for characterizing the dual space of continuous functions on an interval?
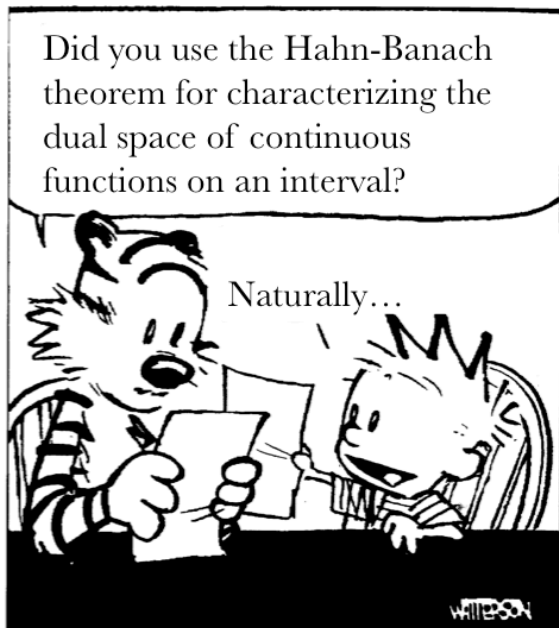
Naturally…

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vector spaces, normed spaces, and Hilbert spaces; the Projection Theorem and complete orthogonal systems; linear operators, bounded operators, adjoint operators; The Hahn-Banach Theorem; the Riez Representation Theorem; Duality. Most of the class will be to learn about results on abstract and possibly infinite-dimensional spaces, but with time we will also explore finite dimensional results specifically for optimization; e.g. Farkas' lemma and its role in the proof of KKT Theorem. Be prepared for a good time practicing abstract thinking and learning how to construct a beautiful proof!

Vector Spaces

Normed Spaces

Hilbert Spaces
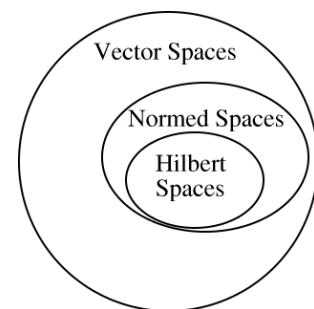
Instructor: Prof Laura Balzano, EECS
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